MODIS TECHNICAL TEAM MEETING

September 1, 1995

The MODIS Technical Team Meeting was chaired by Vince Salomonson. Present were Bill Barnes, Dorothy Hall, Harry Montgomery, Steve Ungar, David Herring, Chris Justice, Locke Stuart, Dick Weber, Catherine Harnden, Barbara Putney, and Wayne Esaias. Bob Lutz, of ESDIS, attended as a special guest to deliver a presentation on data quality assurance.

1.0 SCHEDULE OF EVENTS

Sept. 13 - 14   MODIS Calibration Peer Review at SBRC
Sept. 13 - 14   Snow and Ice Workshop, first day in Reston and second day
at GSFC
Sept. 14   "MODIS-light" Follow-up Presentation by Paul Westmeyer
and Steve Neeck to the Technical Team
Nov. 13 - 17   MODIS Science Team Meeting at GSFC

2.0 MINUTES OF THE MEETING

2.1 MODIS Project Reports

Weber announced that the Calibration Peer Review was rescheduled for Sept. 13 & 14 at SBRC.

Barnes distributed the list of concerns currently facing SBRC and MODIS Project and briefly discussed each (see Attachment 1). Specifically, Barnes noted that the E2-NIR Lens for the MODIS Protoflight Model (PFM) has high scatter characteristics, poor cloud edge response. He said the lens exceeds the transient response specification and could have a significant impact on the Ocean Discipline Group's science. SBRC is currently pricing a repair to the lens, which Jim Young has recommended. Young estimates the fix will take about three weeks.

According to Barnes, Young also remarked that so far the improvements to the MODIS PFM optics are not as good as he had hoped. SBRC found that both the fore and aft optics contribute to the light scatter problem.

Barnes stated that particulate cleanliness was a concern on the MODIS Engineering Model (EM) in that it also contributed to the scattered light problem. Barnes said MODIS Project is asking for increased emphasis on cleanliness for the PFM. Weber noted that it is difficult to clean many of the subsystems on MODIS once the instrument is assembled because you cannot get to them.

Barnes said MODIS Project is also concerned about the tracking of point-spread functions once MODIS is launched. He explained that point-spread functions are required for image verification, which is MODIS' only avenue to approach the required cloud edge response. SBRC plans to scan and track the line-spread functions, the sufficiency of which is yet to be determined. Barnes explained that SBRC can measure point-spread functions, but feels that to do so for every band would be a major undertaking.

Barnes reported that it now seems that there are too many PFM tests scheduled for the time remaining before delivery. Some tests may be deselected. MODIS Project will work with SBRC to prioritize the remaining tests and reassess the test schedule.

2.1.1 Spectral Problems on Band 26
Regarding the previously discussed (see the Aug. 3, 1995 Technical Team Minutes) problem in the SWIR Top of Atmosphere (TOA) spectral response of band 26, Barnes reported that Yoram Kaufman gave permission to ease the specification, thereby widening band 26 by 1 nm toward the shorter wavelengths of the spectrum and 10 nm toward the longer wavelengths. Barnes stated that SBRC will replace the band 26 filter on the Flight Model, and they are considering replacing it on the PFM.

2.1.2 Bands 30 and 31
Barnes showed a graph illustrating the LWIR spectral radiances of bands 30 and 31, which are slightly out of spec. According to Barnes, Paul Menzel feels that those bands are OK as they are as long as they are well characterized on the PFM and Flight Model.

2.2 Possibly Limited Ocean View
Esaias reported that he and Kevin Turpey have been working with a 3-year data set of the CZCS band 5. They constructed a kernel that they convolve with the CZCS scenes to loosely approximate what MODIS will see in its comparable band {which one?}. Esaias said that for sixteen scenes they computed the percent of ocean pixels and the percent of pixels that are contaminated. He explained that a lot of MODIS data will be contaminated by the point-spread function and so the Science Team's knowledge of it needs to be very good. In conclusion, Esaias estimates that due to light scatter from clouds MODIS may obtain as little as 9 percent of good, uncontaminated data over oceans.

Justice observed that the Science Team would like to see the engineering artifacts built into the test data sets collected by SDST, with input from MCST. Salomonson cautioned that those data must be carefully used and carefully advertised so that they are not misconstrued.

2.3 SDST Reports
Putney reported that Toolkit 5 was delivered from the ESDIS Core System (ECS) and it works fine. She said that SDST has some metadata issues that they are working.

Putney stated that snow and ice data were delivered by Dorothy Hall and the data look good.

2.4 MODLAND Reports
Justice announced that MODLAND is one week behind in its delivery of beta code. The good news, however, is that the group is on track to deliver the code and has made two deliveries already.

Justice reported that in a recent meeting the discipline leaders decided to move ahead on establishing an advisory panel on SDST. Further plans for this panel are forthcoming.

Justice again emphasized that he would like to know when the Science Team can expect to see a simulated data set on the engineering artifacts in MODIS.

2.5 Simulated Data
Ungar reported that Al Fleig is overseeing MODIS' simulation efforts. Ungar has been working specifically on cloud simulations. He showed a sample simulated scene of cirrus clouds superimposed over an image. He pointed out that he can now input some significant parameters, such as thin cirrus, into simulated scenes.

Harnden added that she is currently writing an integrated approach to simulated data, which will address a portion of MODIS test data set. This information will be added to the MODIS Test Data Plan, which will be completed in about two weeks.

2.6 Quality Assurance
Bob Lutz, of the ESDIS Science Office, delivered a presentation on the quality assurance (QA) procedure for EOS products (see Attachments 2 and 3). He defined QA as the quality control after calibration, but before archival. In short, quality assurance means that the data are OK for public use. Lutz stressed that ESDIS cannot impose QA parameters on individual products; those parameters will come from individual instrument team members themselves. Lutz said ESDIS' objective is to provide the broad guidelines to facilitate production of QA parameters.

Esaias asked who has the responsibility of maintaining long-term data integrity? Specifically, he wants to know what that function is called, where is the plan, and who is doing it? Lutz responded that that is the DAACs' responsibility. Lutz

didn't have specific answers, but agreed that there are issues for long-term quality control that must be addressed.

3.0 ACTION ITEMS

1. *Masuoka* : Cost out bringing up a MODIS test string in January 1996 at EDC and forward the information to Steve Kempler.
2. *Discipline Group Leaders*: Identify contacts with appropriate IDS investigators, and encourage regular interaction.
3. *MCST*: Consider Yoram Kaufman's concerns and prepare an explanation or brief presentation for the Technical Team as to which unit is best suited for MODIS' Level 1 data--radiance or reflectance.
4. *MAST*: Begin preparing the Agenda for the next MODIS Science Team Meeting--begin planning topics for 2-hour to half a day roundtable discussions and team members to moderate them. Also, allow time for a 1- to 1.5-hour Discipline Group Splinter Session on the first day.
5. *Dave Diner & Ed Masuoka*:   MODIS and MISR need to settle on a protocol(s) to deal with Level 1 and Level 2 data sets to be passed between the two teams to produce joint products. Report at the next SWAMP Meeting.
6. *Guenther*:   Report the modeled results of the 1,000K source for SBRC's integration and alignment collimator to the Technical Team. [These data are forthcoming.]
7. *Fleig and Ungar*: Interact with the group leaders to develop a MODIS data simulation plan for review at the next Science Team Meeting. [Work on this item is still in progress. Simulated data are now available via FTP, and a white paper is forthcoming from Fleig.]

4.0 ATTACHMENTS

NOTE: All attachments referenced below are maintained in MODARCH and are available for distribution upon request. Please contact David Herring, MAST Technical Manager, at (301) 286-9515, Code 920, NASA/Goddard Space Flight Center, Greenbelt, MD 20771 if you desire copies of any attachments.

1. MODIS Sensor Concerns, by Bill Barnes
2. Quality Assurance Procedure for EOS Products, by Bob Lutz
3. Memo Regarding the Fourth Draft of QA Plan, by Bob Lutz